CENTRAL INTELLIGENCE AGENCY

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THIS IS UNEVALUATED INFORMATION

25X1

1. 25X1

25X1 For the barium-strontium mixture the ratio of barium to strontium was one to one, or 50% barium and 50% strontium (molecule percentages). The molecule percentages for the barium-strontium-calcium mixture were 50% barium, 45% strontium, and 5% calcium.

2. 25X1

25X1 The carbonate crystal's shape was generally spherical for production. 25X1 needle shaped crystals on occasion, but for test purposes only. In the spraying 25X1 processes the spherical shape. In the cataphoretic process, according to 25X1 German standards, have used the needle shape; but at Institute 160 25X1 the spherical. The Soviets were never able to achieve the needle shape, which 25X1 is the more desirable. The greatest portion of these crystals varied in 25X1 diameter between 2 and 6 microns. The RCA specs required 3 to 5 microns and specified 25X1 grinding, but the Soviets did not grind them because they were already close to that size to start with.

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3. 25X1

25X1 The carbonate precipitating chemical medium for the barium-strontium mixture was Na_2CO_3 (soda). 25X1 quantities which resulted in 1 to 2 kg of chemical; the precipitation for this quantity took 1 to 20 minutes at a temperature of 90° centigrade. In the barium-strontium-calcium mixture the chemical used was $(NH_4)_2CO_3$ (ammonia). The time of precipitation was approximately 1 to 20 minutes at a temperature of 30° centigrade.

4. 25X1

5. 25X1

25X1 Wire cathodes were cataphoretically coated. If the cathode was of the sleeve type, it was sprayed.

6. 25X1

7. 25X1

25X1

25X1 the Soviets are aware of the effect of impurities in the nickel cathode base. For impulse emissions 25X1 everyone knows 25X1 that magnesium nickel is better than silicon nickel. 25X1 25X1 The Soviets 25X1 boasted of having achieved a nickel purity of 99.99%. A plaque 25X1 was hung testifying to this during the October celebration 25X1 believe in 1950. This figure sounds too good and 25X1 don't believe it. 25X1 worked (in the USSR) with nickel 25X1 of 99.7% or 99.8% purity. 25X1 a company called Heraus, 25X1 in Hanau, Germany, 25X1 can make 99.99% pure nickel, but the cost 25X1 is high and the delivery time is excessive. The Soviets used 25X1 silicon nickel whereas the Germans use magnesium nickel, so that 25X1 comparison is difficult. In general, however, the Soviet nickel quality fluctuated more than the German material. 25X1 spectral analysis of this material was employed.

8. 25X1

As far as wolfram-molybdenum alloy was concerned about 40% of the filament shapes were made of this material, perhaps because it was easier to work with. Spirals are not made with wolfram-molybdenum alloy because it is difficult to "eat out" the core with acid. Traces of the acid will affect the vacuum tube.

9.

Soviet mica is of very good quality compared to the German variety. don't believe that lack of mica creates any bottlenecks in the USSR, as it appeared to be readily available in any quantity. At Institute 160 sheets 18 to 20 cm square, never sheets this size in Germany even during the war. Mica was always scarce in Germany. The Soviet mica didn't have any better insulation properties than did the German mica. Soviet mica was sprayed with magnesium oxide, as was the practice in Germany, in order to improve its insulation qualities.

10.

At first training classes were held in Institute No 160; then, in the summer of 1951, this training establishment was moved to Semashko, near Fryazino. the move was completed during May 1952. The school, while in Fryazino, had evening classes for young workers of Institute 160--I think, to further their education in electronics. To enter this course one had to have 10 years' previous schooling. The school in Semashko did not seem to have this requirement, however. After Germans were "milked" of talents and experience, were assigned ordinary jobs during a final "cooling off" period prior to being returned. this was to conceal the real work of the Institute.

Institute 160 was one of the poorer institutes in the USSR.